

CLAIMS

1. A method of controlling selection of a gateway support node to be used in a telecommunications system which comprises at least one support node serving a subscriber of the telecommunications system, a first and a second gateway support node,

characterized in that the method comprises the steps of:

defining at least one condition for the first gateway support node, so that when the condition is fulfilled, the second gateway support node is more suitable for transmitting packets,

detecting that the condition is fulfilled, and

sending a first message indicating the second gateway support node to the serving support node.

2. A method according to claim 1, **characterized** in that the method further comprises the steps of:

receiving in the first gateway support node a second message which indicates that a tunnel for transmitting packets between the subscriber and an external data network is to be established between the serving support node and the first gateway support node,

checking said condition, and

transmitting a first message to the serving support node if said condition is fulfilled, or

establishing a tunnel if said condition is not fulfilled.

3. A method according to claim 2, **characterized** in that if the tunnel is established between the serving support node and the first gateway support node, the method further comprises the steps of:

detecting a change in operating conditions in the first gateway support node,

checking said condition, and

transmitting a third message indicating said second gateway support node to the serving support node and removing the tunnel in the first gateway support node if said condition is fulfilled.

4. A method according to claim 3, **characterized** in that the system is a GPRS system and said first and third messages are response messages to a 'Create PDP Context' request.

5. A method according to claim 2, **characterized** in that if the tunnel is established between the serving support node and the first gateway support node, the method further comprises the steps of:

5 detecting a change in operating conditions in the first gateway support node,

checking said condition, and

performing the next steps if said condition is fulfilled:

10 transmitting a fourth message indicating said second gateway support node to the serving support node,

10 waiting for an acknowledgement to said fourth message,

receiving the acknowledgement, and

removing the tunnel in the first gateway support node in response to a positive acknowledgement.

15 6. A method according to claim 5, **characterized** in that the system is a GPRS system and said first and fourth messages are response messages to a 'Create PDP Context' request.

7. A method according to claim 1, **characterized** in that the method further comprises the steps of:

20 establishing a tunnel between the serving support node and the first gateway support node,

detecting a change in operating conditions in the first gateway support node,

checking said condition, and

25 transmitting a first message to the serving support node if said condition is fulfilled.

8. A method according to claim 7, **characterized** by, if fulfilment of said condition is detected, removing the tunnel in the first gateway support node in response to the transmission of said first message.

30 9. A method according to claim 7, **characterized** by, if fulfilment of the condition is detected,

waiting for an acknowledgement to the first message,

receiving the acknowledgement, and

removing the tunnel in response to a positive acknowledgement.

10. A packet-switched telecommunications system comprising

a support node (SGSN) serving the subscriber of the telecommunications system, a first and a second gateway support node (GGSN1, GGSN2, GGSN3), **characterized** in that

5 in response to fulfilment of a predefined condition, the first gateway support node (GGSN1) is arranged to send to the serving support node (SGSN) a first message indicating the second gateway support node (GGSN2, GGSN3) which is more suitable for transmitting packets, and

10 in response to receiving the first message, the serving support node (SGSN) is arranged to activate establishment of the tunnel to be used in transmission of packets with the second gateway support node (GGSN2, GGSN3) indicated.

11. A telecommunications system according to claim 10, **characterized** in that

15 the telecommunications system comprises a database (DB) where information on the second gateway support nodes (GGSN2, GGSN3) defined for the first gateway support node (GGSN1) is maintained, and

the first gateway support node (GGSN1) is arranged to retrieve the most suitable second gateway support node (GGSN2) from the database when the predefined condition is fulfilled.

20 12. A telecommunications system according to claim 10 or 11, **characterized** in that the first gateway support node (GGSN1) is arranged to check at least one predefined condition in response to receiving a message requesting establishment of a tunnel from the serving support node (SGSN).

25 13. A telecommunications system according to claim 10, 11 or 12, **characterized** in that

the telecommunications system comprises a tunnel used for transmitting packets between the serving support node (SGSN) and the first gateway support node (GGSN1), and

30 the first gateway support node (GGSN1) is arranged to detect a change in operating conditions and check at least one of said predefined conditions in response to detecting the change.

35 14. A gateway support node (GGSN1, GGSN2, GGSN3) of a packet network which is arranged to communicate with the support node (SGSN) serving a subscriber of the packet network, **characterized** in that

the gateway support node (GGSN1) is arranged to transmit, in response to fulfilment of a predefined condition, a first message indicating another gateway support node (GGSN2, GGSN3) which is more suitable for transmitting packets to the serving support node (SGSN).

5 15. A gateway support node according to claim 14, **characterized** in that the gateway support node (GGSN1) is arranged to check at least one said predefined condition in response to receiving a message requesting establishment of a tunnel from the serving support node (SGSN).

10 16. A gateway support node according to claim 14 or 15, **characterized** in that

there is a tunnel used for transmitting packets between the gateway support node (GGSN1, GGSN2, GGSN3) and the serving support node (SGSN), and

15 the gateway support node (GGSN1, GGSN2, GGSN3) is arranged to detect a change in operating conditions and check at least one said predefined condition in response to detecting the change.

17. A support node (SGSN) serving a subscriber of a packet network which is arranged to communicate with at least a first and a second gateway support node (GGSN1, GGSN2, GGSN3) of the packet network, **characterized** in that

20 the serving support node is arranged, in response to the address of the second gateway support node included in the message received from the first gateway support node (GGSN1), to activate establishment of a tunnel used for transmitting packets with said second gateway support node (GGSN2, GGSN3).

25 18. A serving support node according to claim 17, **characterized** in that it is arranged to remove the existing tunnel to the first gateway support node (GGSN1) in response to activation of tunnel establishment with the second gateway support node (GGSN2, GGSN3).

30 19. A serving support node according to claim 17, **characterized** in that it is arranged to remove the existing tunnel to the first gateway support node (GGSN1) in response to successful establishment of a tunnel to the second gateway support node (GGSN2, GGSN3).